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Uji Efektivitas Ekstrak Etanol Absolut Daun Kopi Robusta (*Coffea canephora* Pierre ex A. Froehner) Terhadap Kematian Larva Nyamuk *Aedes aegypti* Instar III

xvi + 59 halaman + 10 tabel + 13 gambar + 24 lampiran

ABSTRAK

Pengendalian nyamuk *Aedes aegypti* sebagai vektor Demam Berdarah Dengue (DBD) telah banyak dilakukan, salah satunya dengan menggunakan pengendalian kimiawi. Penggunaan pengendalian kimiawi dalam jangka panjang dapat menyebabkan resistensi pada nyamuk *Aedes aegypti*, oleh karena itu diperlukan insektisida alami sebagai alternatif. Larvasida alami seperti daun kopi robusta mengandung senyawa metabolit sekunder yang memiliki efek larvasida terhadap kematian larva *Aedes aegypti*. Tujuan penelitian ini untuk melihat efektivitas konsentrasi dan waktu kontak terhadap kematian larva dengan variasi penelitian adalah eksperimen, desain penelitian: RAL dengan konsentrasi 5%, 6%, 7%, 8% dengan 4 kali pengulangan dan dua kontrol, yaitu kontrol positif (abate) dan negatif (aquadest). Bahan uji penelitian ekstrak daun kopi robusta hasil maserasi dengan pelarut etanol absolut dan berdasarkan uji fitokimia secara kualitatif didapatkan senyawa *tanin, saponin, flavonoid, steroid, dan alkaloid*. Data yang diperoleh berupa jumlah kematian larva dianalisis menggunakan one way ANOVA dan uji *Post hoc* LSD. Hasil penelitian ini menunjukkan perbedaan signifikan ($p < 0,05$), dan didapatkan konsentrasi 8% merupakan konsentrasi yang paling banyak membunuh larva instar III nyamuk *Aedes aegypti* dengan persentase kematian larva sebesar 100%. Hasil analisis uji regresi bahwa hubungan konsentrasi daun kopi robusta terhadap kematian larva *Aedes aegypti* adalah $R=0,967$ dan uji regresi hubungan waktu kontak terhadap kematian larva *Aedes aegypti* adalah $R=0,991$. Untuk mengetahui efektivitas ekstrak etanol absolut daun kopi robusta terhadap kematian larva *Aedes aegypti* Instar III didapatkan nilai LC_{90} pada konsentrasi 7% dan untuk nilai LT_{90} pada 23 jam dalam membunuh 90% larva nyamuk *Aedes aegypti*.

Kata Kunci: Efektivitas, Daun Kopi Robusta, Larva *Aedes aegypti*

Daftar Bacaan: 73 (2012-2023)

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**Test The Effectiveness of Absolute Ethanol Extract of Robusta Coffee Leaves
(*Coffea canephora* Pierre ex A. Froehner) Against Death of *Aedes aegypti*
Instar III Mosquito Larvae**

xvi + 59 pages + 10 tables + 13 figures + 24 attachments

ABSTRACT

Controlling the *Aedes aegypti* mosquito as a vector for Dengue Hemorrhagic Fever (DHF) has been widely carried out, one of which is by using chemical control. Long-term use of chemical control can cause resistance in the *Aedes aegypti* mosquito, therefore natural insecticides are needed as an alternative. Natural larvicides such as robusta coffee leaves contain secondary metabolite compounds which have a larvicidal effect on the death of *Aedes aegypti* larvae. The aim of this research was to see the effectiveness of concentration and contact time on larval death with research variations, namely experimental, research design: RAL with concentrations of 5%, 6%, 7%, 8% with 4 repetitions and two controls, namely positive control (abate) and negative (aquadest). The research material was robusta coffee leaf extract, the result of maceration with absolute ethanol solvent and based on qualitative phytochemical tests, tannin, saponin, flavonoid, steroid and alkaloid compounds were obtained. The data obtained in the form of the number of larval deaths were analyzed using one way ANOVA and the post hoc LSD test. The results of this study showed a significant difference ($p < 0.05$), and it was found that a concentration of 8% was the concentration that killed the third instar larvae of the *Aedes aegypti* mosquito the most with a percentage of larval death of 100%. The results of the regression test analysis show that the relationship between the concentration of robusta coffee leaves and the death of *Aedes aegypti* larvae is $R=0,967$ and the regression test of the relationship between contact time and the death of *Aedes aegypti* larvae is $R=0,991$. To determine the effectiveness of absolute ethanol extract of robusta coffee leaves on the death of *Aedes aegypti* Instar III larvae, the LC_{90} value at a concentration of 7% was obtained and the LT_{90} value at 23 hours killed 90% of the *Aedes aegypti* mosquito larvae.

Keywords : effectiveness, robusta coffee leafes, *Aedes aegypti* larvae

Reading list: 73 (2012-2023)